PUTTING SITES TO WORK

How Superfund Redevelopment in Region 10 Is Making a Difference in Communities

2022 DATA

REGION 10 ECONOMIC PROFILE

EPA

Cover page photos:
Puget Sound Naval Shipyard Complex (Washington), Eastern Michaud Flats Contamination (Idaho), Bremerton Gas Works (Washington), Bunker Hill Mining & Metallurgical Complex (Idaho), Asarco, Inc. (Washington), Pacific Sound Resources (Washington).

Figure 1: 21st Street Park, near the head of the water way at Commencement Bay, Near Shore/Tide Flats site (Washington).

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PREFACE

EPA's Superfund Program is a cornerstone of the work that the Agency performs for citizens and communities across the country. The revitalization of places affected by contaminated lands is a key part of Superfund's mission, meeting community needs for thriving economies and improved environmental and public health outcomes. Through EPA's Superfund Redevelopment Program, the Agency contributes to these communities' economic vitality by supporting the return of sites to productive use.

EPA is focused on accelerating work and progress at all Superfund sites across the country, and supporting redevelopment and community revitalization. Using resources from the 2022 Bipartisan Infrastructure Law, EPA is providing necessary funding to enable delayed cleanup efforts at 49 Superfund sites to move forward. More than 60% of these sites are in historically underserved communities. EPA is leading the way to support the return of these and other once-contaminated sites to productive use.

These regional profiles highlight community-led efforts as EPA expedites cleanup and remediation and engages with partners and stakeholders to support redevelopment and community revitalization.

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INTRODUCTION

EPA's Region 10 office serves Alaska, Idaho, Oregon, Washington and 271 tribes. The Pacific Northwest Region is known for its remarkable scenery and deep ties to maritime industries, mining, metal refining, timber, and petroleum exploration and production.

The region's beauty, history and economic strength continue to attract new residents and visitors from across the country. Local governments, state agencies and diverse organizations in these western states work hard to help older, smaller communities remain vibrant while carefully planning for new growth in major cities and suburbs. A key part of this workfocuses on finding new uses for old industrial, timber and mining sites, including Superfund sites. The Superfund program in EPA Region 10 is proud to play a role in these efforts.

The cleanup and reuse of Superfund sites often restores value to site properties and amenities to surrounding communities that have been negatively affected by contamination. Site redevelopment can revitalize a local economy with jobs, new businesses, tax revenues and local spending.

Region 10 Sites in Reuse and Continued Use: Business and Job Highlights

Businesses:	*1,227*
Total Annual Sales:	*$10.6 billion*
Number of People Employed:	*33,346*
Total Annual Employee Income:	*$2.3 billion*

Figure 2. A local vendor's market at the Asarco Inc. site (Washington).

Through efforts such as the Superfund Redevelopment Program, EPA Region 10 helps communities reclaim cleaned-up Superfund sites. Factoring the reasonably anticipated future use of Superfund sites into the cleanup process promotes their safe redevelopment. In addition, EPA Region 10 works closely with state and local officials to remove barriers that have kept many Superfund sites vacant or underused. EPA Region 10 works to ensure that businesses on properties being cleaned up under Superfund can continue operating in a way that protects human health and the environment during site investigations and cleanup work. This continuity enables these businesses to remain open and serve as a source of jobs and income for local communities.

Superfund sites across Region 10 are home to commercial and industrial parks, retail centers, condominiums and single family homes. Many sites continue to host industrial operations, including large-scale manufacturing facilities. Some sites now support alternative energy projects. Others have been transformed into ecological preserves, parks and recreation complexes. On-site businesses and organizations at current and former Region 10 Superfund sites provide an estimated 33,346 jobs and contribute an estimated $2.3 billion in annual employment income. Sites in reuse and continued use in Region 10 generate $19 million in annual property tax revenues for local governments.[1]

1 Business and property value tax figures represent only a subset of the beneficial effects of sites in reuse or continued use in Region 10. There are 40 Superfund sites in reuse or continued use in Region 10 for which EPA does not have business data, including eight federal facilities on the Superfund National Priorities List (NPL). Not all sites in reuse involve an on-site business or other land use that would employ people. Several sites without businesses have beneficial effects that are not easily quantified, such as properties providing ecological or recreational benefits (e.g., parks, wetlands, ecological habitat and open space). In addition, there are 45 sites in reuse or continued use in Region 10 for which EPA does not have property value or tax data, including eight NPL federal facilities.

This profile looks at how redevelopment activities at Superfund sites make a difference in communities across Region 10. In particular, it describes some of the beneficial effects of redevelopment and continued use of current and former Superfund sites. The profile also describes the land values and property taxes associated with Superfund sites returned to use and sites that have remained in use throughout the cleanup process. EPA updates these profiles periodically. The beneficial effects may increase or decrease over time due to changes in:

- The number of sites in reuse or continued use.
- The number of on-site businesses.
- Data availability.
- Changes in business and property value data.

Figures presented represent only a subset of all Superfund sites in reuse or continued use in Region 10.

Figure 3. Left: Small businesses in downtown Smelterville at the Bunker Hill Mining & Metallurgical Complex (Idaho); Right: An Amazon fulfillment center at the Reynolds Metals Company site (Oregon).

SUPPORT FOR SUPERFUND REDEVELOPMENT

EPA Region 10 is committed to improving the health and livelihood of Americans by cleaning up and returning land to productive use. In addition to protecting human health and the environment through the Superfund program, Region 10 partners with stakeholders to encourage redevelopment opportunities at Superfund sites. Region 10 helps communities and cleanup managers consider redevelopment during cleanup planning and evaluate remedies already in place to ensure appropriate redevelopment. In addition, EPA participates in partnerships with communities and encourages opportunities to support Superfund redevelopment projects that emphasize environmental and economic sustainability.

Specific redevelopment support efforts in EPA Region 10 include:

- Identifying and evaluating local land use priorities to align with site cleanup plans through the redevelopment planning process.
- Facilitating cleanup and redevelopment discussions to help resolve key issues between parties interested in site redevelopment.
- Supporting targeted projects intended to help Region 10 communities and EPA find the right tools to move site redevelopment forward.
- Making efforts to help address communities' and developers' liability, safety and reuse concerns through development of educational materials, comfort letters, developer agreements and environmental status reports – known as Ready for Reuse Determinations – that provide information about the appropriate use of sites.
- Supporting partnerships with groups committed to returning Superfund sites to productive use such as the Rails-To-Trails Conservancy.
- Developing reuse fact sheets, websites, webinars and reuse case studies to share opportunities and lessons associated with Superfund Redevelopment.

Reuse Assessment
Martin-Marietta Aluminum Co. Superfund Site
The Dalles, Oregon
March 2022

Introduction

EPA Region 10 and EPA's Superfund Redevelopment Program (SRP) are supporting a reuse assessment for the Martin-Marietta Aluminum Co. Superfund site in The Dalles, Oregon. SRP helps communities reclaim and reuse formerly contaminated land through site-specific reuse support. This assessment discusses the reuse potential of the site, based on site conditions, community goals, area land uses and regional economic opportunities.

Figure 1. The site's location in The Dalles, Oregon.

Region 10 staff requested SRP assistance with an assessment of the site's reuse potential. Beginning in spring 2021, SRP contractor Skeo worked with the Region 10 site team to collect remedy status information, gather local use and zoning data, and perform reuse analyses. This reuse assessment shares the findings from this work. It covers site history and status information as well as reuse suitability considerations, resources and potential next steps to support the site's reuse.

Site Context

The 350-acre site is in The Dalles, Oregon, west of the Columbia River. The Martin Marietta Corporation (now Lockheed Martin) used the site for aluminum production activities from 1958 to 1984. During operations, spent pot liner waste and hazardous contaminants, including cyanide, fluoride, sodium, polynuclear aromatic hydrocarbons (PAHs) and sulfates, were released into the environment. Facility operations and improper waste burial contaminated site soil and groundwater.

Detection of cyanide compounds in the groundwater prompted the need for remedial action. EPA added the site to the Superfund Program's National Priorities List (NPL) in 1987 and began overseeing the Remedial Investigation by the potentially responsible party Lockheed Martin. EPA selected the site's long-term remedy in the site's 1988 Record of Decision (ROD) and updated it in a 1994 Explanation of Significant Difference (ESD). The goal of the remedy is to prevent dermal (skin) and airborne exposure to contaminants and the spread of contaminated groundwater and surface water. The remedy includes:

- Consolidation of contaminated material into two landfills on site. One landfill is regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The other landfill is regulated by the Resource Conservation and Recovery Act (RCRA).
- Capping of the two landfills.
- Placement of a soil cover over the scrubber sludge ponds (sludge ponds).

Figure 4. EPA's 2022 Reuse Assessment of the Martin-Marietta Aluminum Co. site (Oregon).

These efforts have helped build expertise across Region 10, making it easier to both consider future use of Superfund sites prior to cleanup and to identify opportunities for removing reuse barriers. These efforts also help tribes, state agencies, local governments, communities, potentially responsible parties, site owners, developers, and other partners and stakeholders to better understand potential future uses for Superfund sites. This helps stakeholders engage early in the cleanup process, ensuring that Superfund sites are restored as productive assets for communities. Most importantly, these efforts lead to significant returns for communities, including jobs, annual income and tax revenues.

SUPERFUND REDEVELOPMENT: THE BIG PICTURE

EPA can take and oversee immediate action at contaminated sites through short-term cleanup actions, also called removal actions.[2] EPA refers sites warranting long-term cleanup to its remedial program or to state programs. EPA's National Priorities List (NPL) is a list of sites the Agency is targeting for further investigation and possible remediation through the Superfund program. Once EPA places a site on the NPL, the Agency studies the contamination, identifies technologies that could address the material and evaluates alternative cleanup approaches. EPA then proposes a cleanup plan and, after collecting public input, issues a final cleanup plan. The Agency then cleans up the site or oversees cleanup activities. EPA has placed 105 sites in Region 10 on the NPL.

Whenever possible, EPA seeks to integrate redevelopment priorities into site cleanup plans. In Region 10, 75 NPL sites and 14 non-NPL Superfund sites are in use. These sites have either new uses in place or uses that remain in place from before cleanup. Many of these sites have been redeveloped for commercial, industrial and residential purposes. Others have been redeveloped for recreational, ecological and agricultural uses. Businesses and other organizations also use some site areas for memorials and parking areas. Many redeveloped sites support multiple uses and have the capacity to support additional uses and further redevelopment. The following sections take a closer look at the beneficial effects of businesses operating on current and former Superfund sites in Region 10.

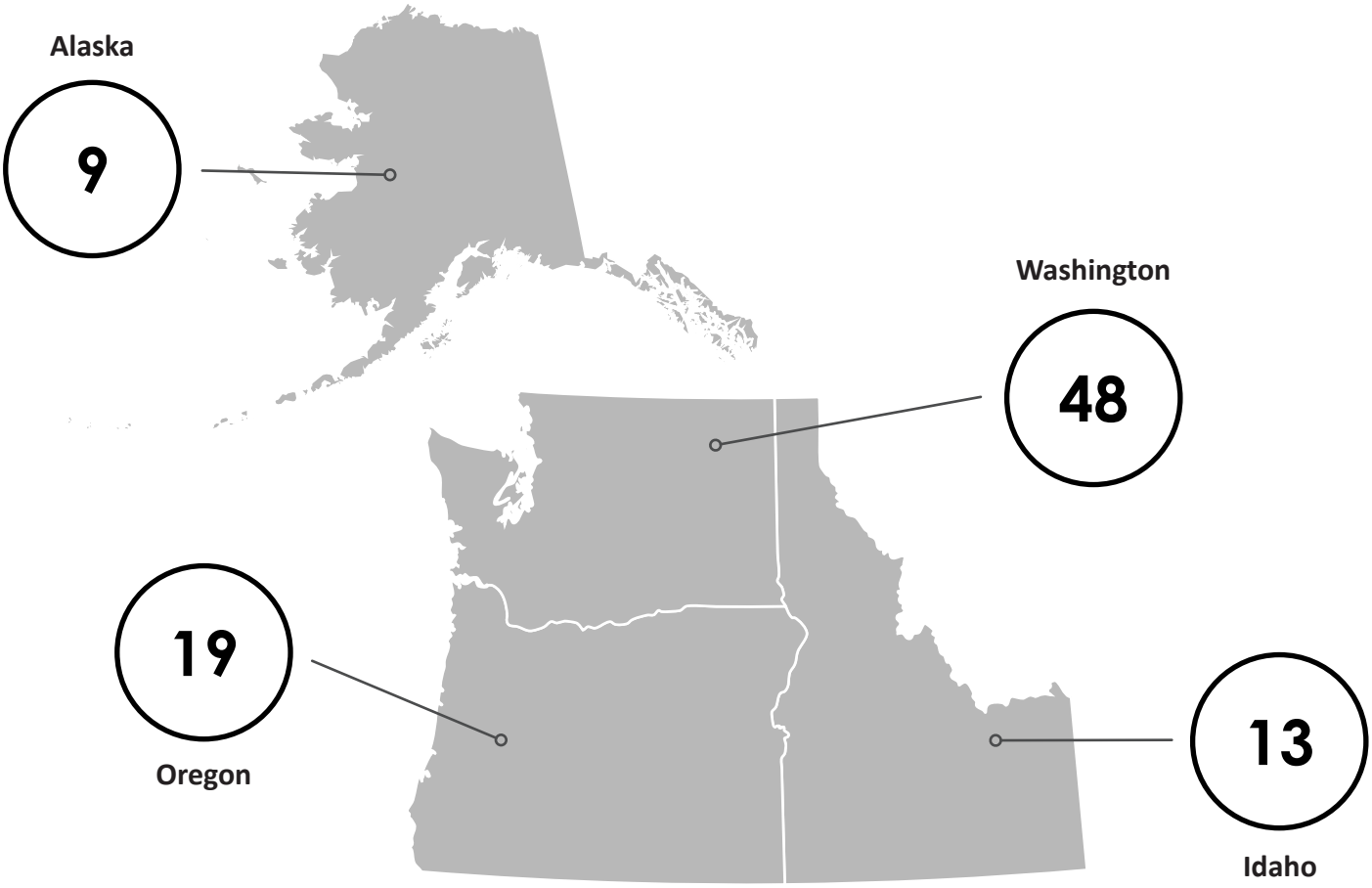


Figure 5. Sites in reuse and continued use in Region 10.

(#) : Total number of sites in use per state.

2 Removal actions may be taken at sites on the NPL and sites not on the NPL.

Figure 6. Left: New walking trails at the restored Little Squalicum Park at the Oeser Co. site (Washington); Right: A recycling center and transfer station continues to operate at the Centralia Municipal Landfill site (Washington).

Sites in Reuse and Continued Use: A Closer Look

Reuse Type	Description	Region 10 Example
In Reuse	*Part or all of a site is being used in a new, different manner than before Superfund involvement. Or, the property was vacant and cleanup was designed to support a new, specific land use.*	*FMC Corp. (Yakima Pit) (Washington) – this site, once a pesticide formulation facility, now hosts a hardware store and a roofing supply store.*
In Continued Use	*Historical uses at a site remain active, and/or the site is still used in the same general manner as when the Superfund process started at the site.*	*Centralia Municipal Landfill (Washington) – municipal landfill operations continued at the site throughout cleanup. The landfill remains active today.*
In Reuse and Continued Use	*Part of a site is in continued use and part of the site is in reuse.*	*Eastern Michaud Flats (Idaho) – cleanup enabled a phosphate ore processing facility to remain open during cleanup. A fertilizer distribution business opened on site in 2017.*

40 | 12 | 37 = 89 SITES IN USE

25 | 5 | 19 = 49 SITES WITH BUSINESSES

BENEFICIAL EFFECTS OF SUPERFUND SITE REDEVELOPMENT IN REGION 10

Businesses and Jobs

EPA has collected economic data for 1,227 businesses, government agencies and civic organizations operating on 45 NPL sites and four non-NPL sites in reuse and continued use in Region 10. (See the State Redevelopment Profiles for each state's reuse details.) Businesses and organizations at these sites are part of several different sectors, including lodging, professional trade, industrial trade and health care services.

Businesses and organizations at Region 10 Superfund sites include hotels, schools, grocery stores, restaurants, civic and social organizations, freight transportation facilities, health care centers and manufacturing facilities.

Figure 7. A resort at the Bunker Hill Mining & Metallurgical Complex site (Idaho).

The businesses and organizations at these sites generate about $10.6 billion in estimated annual sales and employ about 33,346 people, earning an estimated $2.3 billion in annual employment income. This income injects money into local economies and generates revenue through personal state income taxes. These businesses also help local economies through direct purchases of local supplies and services. On-site businesses that produce retail sales and services also generate tax revenues through the collection of sales taxes, which support state and local governments. Table 1 provides more detailed information.

Table 1. Site and Business Information for Region 10 Sites in Reuse and Continued Use (2022)

	Sites[a]	Sites with Businesses	Businesses[b]	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*40*	*25*	*60*	*$2.2 billion*	*6,375*	*$361 million*
In Continued Use	*12*	*5*	*6*	*$306 million*	*672*	*$57 million*
In Reuse and in Continued Use	*37*	*19*	*1,161*	*$8.1 billion*	*26,299*	*$1.9 billion*
Totals	***89***	***49***	***1,227***	***$10.6 billion***	***33,346***	***$2.3 billion***

[a] Eight sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.

[b] Also includes other organizations such as government agencies, nonprofit organizations and civic institutions. Business information is not available for all businesses on all Superfund sites in reuse or continued use. Throughout this report, sales and annual employee income may not sum exactly to the totals presented due to rounding.

Property Values and Property Tax Revenues

Properties cleaned up under the Superfund program and returned to use have the potential to increase in value significantly. This increased value can boost property tax revenues, which help pay for local government operations, schools, transit systems and other public services. Site properties at the Union Pacific Railroad Co. site in Idaho are now valued at over $75 million.

Identifying increases in property values and property taxes following cleanup and reuse is challenging. This is due to several factors, including limited data on past property values and the frequency and timing of local property value assessments. Likewise, many factors affect property values, including external economic and neighborhood factors not related to a site's contamination or Superfund status. It is also difficult to isolate the effects of Superfund cleanup and redevelopment using current property values. However, these values do provide insight into the current value of Superfund properties and the potential loss in economic value if the properties were not cleaned up and made available for reuse or continued use.

Region 10 Sites in Reuse and Continued Use: Property Value and Tax Highlights

Total Property Value: ***$2.8 billion***

Total Annual Property Taxes: ***$19 million***

Figure 8. New residential housing being constructed at the North Ridge Estates site (Oregon).

EPA has collected property value and tax data for 44 Superfund sites in reuse and continued use in Region 10.[3] These sites span 1,092 property parcels and 10,292 acres. They have a total property value of $2.8 billion. The average total property value per acre is $270,000.

Land and improvement property value information is available for 43 of the sites. These properties have a total land value of $1.5 billion and a total improvement value of $1.2 billion.[4]

Property tax information is available for all 44 sites. The properties generate a combined $19 million in local property taxes annually.

Table 2. Property Value and Tax Information for Sites in Reuse and Continued Use in Region 10[a]

Total Land Value (43 sites)[b]	*Total Improvement Value (43 sites)*	*Total Property Value (44 sites)*	*Total Property Value per Acre (44 sites)[c]*	*Total Annual Property Taxes (44 sites)*
$1.5 billion	***$1.2 billion***	***$2.8 billion***	***$270,000***	***$19 million***

[a] Results are based on an EPA Superfund Redevelopment Program effort to collect on-site property values and property taxes for a subset of Superfund sites. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2021 to 2023. Throughout this report, property and tax values may not sum exactly to the totals presented due to rounding.

[b] Land and improvement value for one of the sites is listed as $0.

[c] Based on total property value amount of $2.8 billion divided by total acreage of 10,292.

3 There are 45 additional sites in reuse or continued use in Region 10 for which EPA does not have property value or tax data, including eight NPL federal facilities.

4 Property values consist of land value and the value of any improvements (buildings and infrastructure) placed on a property. When sites are redeveloped, some or all of these improvements may be new or already in place. In some cases, the breakdown showing the land value and improvement value is not always available; only the total property value may be available.

BENEFICIAL EFFECTS FROM ENHANCED RECREATIONAL AND ECOLOGICAL AMENITIES

In addition to hosting commercial developments, retail centers and industrial facilities, many Region 10 sites in reuse and continued use provide recreational and ecological benefits. Green space and habitat reuses help attract visitors and residents and indirectly contribute to local economies.

Figure 9. Beach access provides recreational opportunities at the Pacifc Sound Resources site (Washington).

Careful planning can enable the integration of green spaces and habitat into site cleanup plans, resulting in the transformation of contaminated properties into valuable community and wildlife assets. Green spaces are integral components of sustainable communities – they help protect the environment and human health while providing other social and economic benefits. Parks, community gardens and other public green spaces create opportunities for people to gather, exercise and connect with nature. The creation of green spaces and habitat at once-contaminated properties serves to re-introduce ecosystems and biodiversity into urban and suburban landscapes by providing corridors for migrating species and preserving habitat. They can also mitigate stormwater runoff problems by slowly absorbing and naturally filtering stormwater, resulting in improved water quality due to decreased runoff and erosion.

Parks, natural areas and scenic landscapes also have great economic value – supporting regional economies through tourism, agriculture and other activities. Economic impacts of recreation activities can include outdoor recreation spending and reduced public costs related to healthcare and infrastructure. In 2021, outdoor recreation contributed $862 billion to the U.S. economy, supporting 4.5 million jobs and 1.9% of the total gross domestic product (GDP). Outdoor recreation's contribution to the GDP grew 18.9% compared to the overall economy that grew 5.9% in 2021.[5] Protected green space can also increase the property values of nearby homes by providing amenities that draw people to live and work in the community. Many sites in Region 10 provide recreational and ecological benefits.

5 State of the Outdoor Market, Fall 2022. Outdoor Industry Association. Available at https://outdoorindustry.org/wp-content/uploads/2022/12/OIA-State-of-the-Outdoor-Market-Report-Fall-2022.pdf.

LOCKHEED WEST SEATTLE

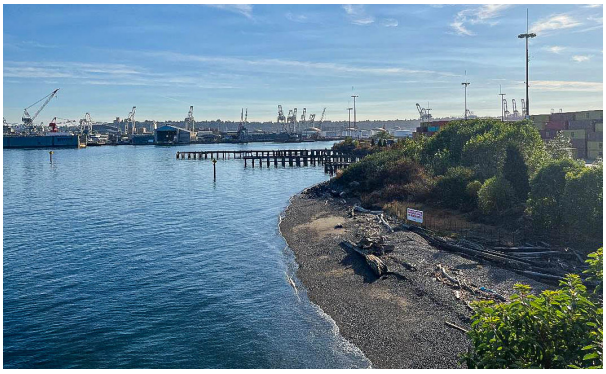


Figure 10. Aquatic tidelands at the Lockheed West Seattle site (Washington).

The Lockheed West Seattle Superfund site is on the southwestern shoreline of Elliott Bay in Seattle, Washington. The site is next to the Port of Seattle's Terminal 5 and the West Waterway, and includes a former shipyard support operations area, and about 40 acres of in-water marine sediment in aquatic tidelands. Past shipbuilding practices at the former shipyard released contaminants into the bay. Before its transfer to the Superfund program, the state of Washington listed the site as a sediment cleanup priority project under state cleanup authority. EPA added the site to the National Priorities List (NPL) in 2007, and selected the site's remedy in 2013. Lockheed Martin Corporation began cleanup in 2018. Cleanup included dredging and disposing of contaminated sediment, adding six to nine inches of clean sand over the site, a fish consumption advisory for Puget Sound Marine Recreational Area and long-term monitoring. Cleanup was completed in 2020, reducing contaminants in sediment-dwelling animals, fish, shellfish and birds, and reduced human exposure to contamination.

The site and adjacent aquatic areas are designated as treaty-reserved fishing areas for the Muckleshoot Indian Tribe, the Suquamish Tribe and the Yakama Nation. Tribal fishermen have and will continue to operate commercial net fisheries in the waterway for salmon and clams. EPA and Lockheed Martin coordinated with tribal members throughout the cleanup process. Natural areas at the site support birds, crabs and fish, including salmon and squid, as well as recreational uses, including net fishing, beach play and clamming.

The West Waterway part of the site includes a federal navigation channel that remains in use. The Port of Seattle is expanding Terminal 5 along the West Waterway. The Port of Seattle began the $500 million expansion project in 2019 and completed it in 2022. Phase two of the expansion project is ongoing. The U.S. Army Corps of Engineers received congressional approval through the Water Resources Development Act of 2018 to proceed with deepening the navigation channel to 57 feet in both East and West Waterways.

SPOKANE JUNKYARD/ASSOCIATED PROPERTIES

Figure 11. Picnic and playground facilities at the sports complex at the Spokane Junkyard/Associated Properties Superfund site (Washington).

The 16-acre Spokane Junkyard/Associated Properties Superfund site is in Spokane, Washington. From 1936 to 1983, Spokane Metals Company ran a recycling facility on site. It salvaged metal from transformers and batteries. Next to the recycling facility, Spokane Junkyard accepted military surplus items, automobiles, heavy equipment, appliances and electrical transformers from the 1940s to 1983. Site investigations after a fire in 1987 found heavy metals in the soil. EPA added the site to the NPL in 1994. EPA and the site's responsible parties dug up contaminated soil and put it in an engineered cell. A parking lot was later built on top of the cell. Parties completed these activities in 1996. EPA took the site off the NPL in 1997.

After cleanup, Bemiss Neighborhood Council worked to identify reuses for the site that would best address local needs. The Spokane Youth Sports Association headed a team to plan, fund and build a multi-use sports complex for youth in the area. The Association coordinated redevelopment plans with EPA to make sure the remedy remained protective of human health and the environment, and that land use restrictions on site were followed.

Construction of the Andrew Rypien Field sports complex finished in 2002. As a part of the project, the paved containment cell area is now a parking lot for the sports complex. The complex includes soccer, rugby and baseball fields, two basketball courts, a picnic area and a concession stand. The field serves over 4,500 neighborhood children. In 2004, the sports complex received the national Phoenix Community Impact Award for achievement of excellence in Superfund site reuse. In addition to the sports fields, the Northeast Community Center hosts a community garden on site. A lighted walking path surrounds field and garden areas. Thanks to dedicated collaboration and planning efforts, this once-blighted former junkyard and recycling facility now provides much-needed recreation space for the community.

Why Are Wetlands Economically Important?

Superfund site reuse can support wetland habitat, as seen at several sites in Region 10. Cleanup of the Oeser Co. site in Washington included the restoration of creeks and wetlands with native plants and shrubs, including native red alder, cottonwood, cedar and maple tree seedlings. At the Bunker Hill Mining & Metallurgical Complex site in Idaho, the remedy included converting nearly 400 acres of agricultural property into wetlands, which now provide bird habitat. The restoration effort earned the site EPA Region 10's Howard Orlean Excellence in Site Reuse Award in 2015.

Figure 12. Restored wetlands at the Bunker Hill Mining & Metallurgical Complex site provide habitat for tundra swans (Idaho).

Wetlands provide a variety of benefits. The combination of shallow water, high levels of nutrients and primary productivity is ideal for organisms that form the base of the food web and feed many species of fish, amphibians, shellfish and insects. Wetlands are extremely effective in removing pollutants from water and acting as filters for future drinking water. Wetlands play a role in reducing the frequency and intensity of floods. They can store large amounts of carbon. They also provide recreational amenities.

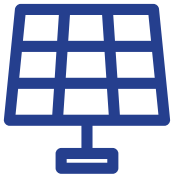
These benefits also have economic value. Replacing wetlands' water treatment services with manmade facilities, for example, would be expensive. Worldwide, wetlands provide an estimated $47.2 trillion in ecosystem services. To learn more, see:

- EPA's *Economic Benefits of Wetlands*: www.epa.gov/sites/default/files/2021-01/documents/economic_benefits_of_wetlands.pdf
- EPA's *Ecosystem Services at Superfund Sites: Reuse and the Benefit to Community:* semspub.epa.gov/src/document/HQ/100003256
- EPA's *Why Are Wetlands Important?*: www.epa.gov/wetlands/why-are-wetlands-important
- EPA's *Functions and Values of Wetlands*: www.epa.gov/sites/default/files/2021-01/documents/functions_values_of_wetlands.pdf

BENEFICIAL EFFECTS FROM ALTERNATIVE ENERGY PROJECTS

Alternative energy projects provide a range of beneficial effects. They support construction and operations jobs, spur local investment for manufacturing and materials, create benefits for landowners in the form of land lease and right-of-way payments, lower energy costs, and reduce greenhouse gas emissions. They also help hedge against energy price and supply volatility, support local business competitiveness and technology supply chain development, provide outreach and public relations opportunities for site owners and communities, and contribute to broader economic development planning. Alternative energy projects at Superfund sites and other contaminated lands help support White House priorities to strengthen resilience to climate change and increase access to clean energy sources. These projects also can help communities reclaim and return contaminated lands to productive uses, while supporting EPA's mission to protect human health and the environment.

As of September 2022, EPA is tracking two alternative energy projects at two Superfund sites in Region 10. These projects have an installed capacity of about 131 kilowatts.



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Solar Projects

Alternative energy projects tracked in **Region 10** generate an estimated **717 megawatt hours** each year.[6]
This is equivalent to...

508 metric tons of carbon dioxide

64 homes' energy use for one year

113 gas-powered vehicles driven for one year

6 Equivalencies were calculated using power production. Production values were not available for one project in Region 10. Estimated power production for solar projects was calculated using facility capacity (megawatts) with the National Renewable Energy Laboratory's PVWatts Calculator pvwatts.nrel.gov. To learn more about equivalencies, visit www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

ENVIRONMENTAL JUSTICE AND ECONOMIC REVITALIZATION

Communities with environmental justice concerns are disproportionately affected by environmental pollution and hazards and typically include marginalized, underserved, low-income groups and people of color, including tribal and indigenous people. Superfund cleanups and redevelopment are opportunities to evaluate how to reduce impacts on these communities and, through meaningful community involvement efforts, engage communities in productive dialogue to increase local benefits through reuse opportunities that meet community needs.

In 2021, President Biden issued two executive orders – Executive Order 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) and Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad). The executive orders directed federal agencies to develop and implement policies and strategies that strengthen compliance and enforcement, incorporate environmental justice considerations in their work, increase community engagement, and ensure that at least 40% of the benefits from federal investments in climate and clean energy flow to underserved communities.

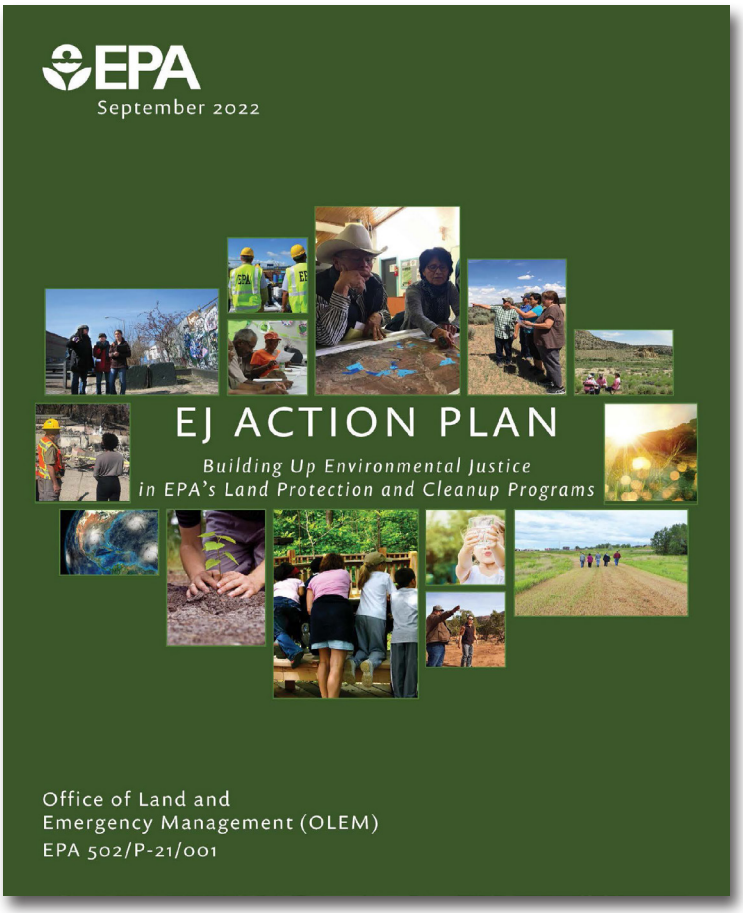

Figure 13. EPA's EJ Action Plan aims to address cleanup issues in overburdened communities across the country.

EPA has taken this charge to heart and, in September 2022, issued the *EJ Action Plan: Building Up Environmental Justice in EPA's Land Protection and Cleanup Programs (EJ Action Plan)*, intended to address land cleanup issues in overburdened communities across the country. The plan includes strategies to enhance nearly two dozen projects while addressing the need for stronger compliance, increased environmental justice considerations in EPA regulations, and improved community engagement. The plan also complements the recommendations for integrating environmental justice into the cleanup and redevelopment of Superfund and other contaminated sites highlighted in the May 2021 National Environmental Justice Advisory Council (NEJAC) report, *Superfund Remediation and Redevelopment for Environmental Justice Communities*.

In addition, EPA is using a $1 billion investment from the Bipartisan Infrastructure Law to fund new cleanup projects at 49 Superfund sites across the country. Many of these sites have been part of a backlog of Superfund sites awaiting funding for cleanup, some of which have been waiting for over four years. This historic investment will finance cleanup at one site in Region 10.

CLIMATE ADAPTATION AT SUPERFUND SITES

Remedies at contaminated sites may be vulnerable to the impacts of climate change and extreme weather events. EPA's Superfund program has developed an approach that raises awareness of these vulnerabilities and applies climate change and weather science as a standard operating practice in cleanup projects. The approach involves periodic screening of Superfund remedy vulnerabilities, prioritizing the Superfund program's steps to adapt to a changing climate, and identifying measures to assure the climate resilience of Superfund sites. EPA is working to ensure that its programs, policies, rulemaking processes, enforcement and compliance assurance activities, and operations consider the current and future impacts of climate change and how those impacts may disproportionately affect overburdened and underserved communities.

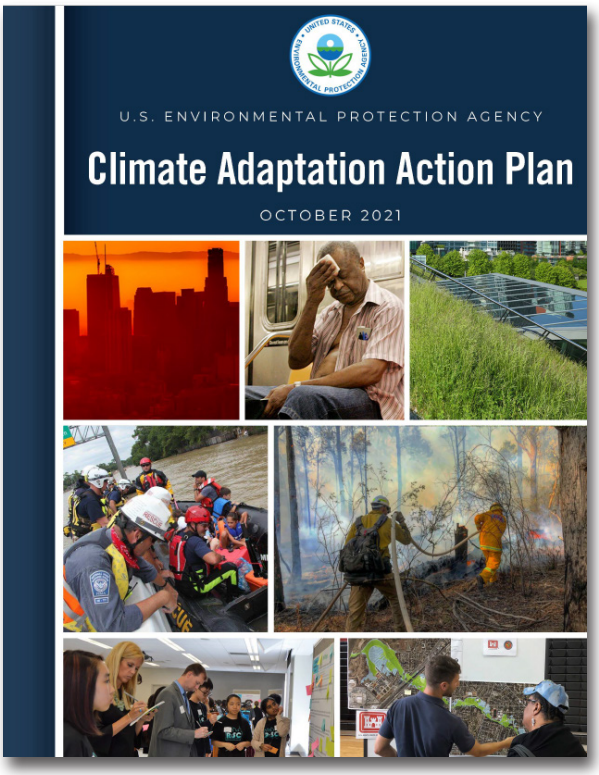

Figure 14. In January 2021, President Biden signed Executive Order 14008, requiring federal agencies to develop climate action plans that describe their climate vulnerabilities and steps to increase resilience to the impacts of climate change. In October 2021, EPA released its updated Climate Adaptation Action Plan, which includes five climate adaptation priority actions that the Agency is taking to increase human and ecosystem resilience as disruptive impacts associated with climate change increase.

EPA's Superfund program has done studies to identify potential vulnerabilities of cleanup actions and evaluate strategies to mitigate these vulnerabilities. In 2012, EPA did a preliminary vulnerability assessment of all NPL sites. EPA found that a significant number of the sites were susceptible to flooding associated with sea-level risk or floodplain proximity. A 2018 EPA study assessed the status of remedies in place at 251 Superfund sites in EPA Regions 2, 4 and 6 that were exposed to tropical-force winds or flooding associated with three major hurricane events the previous year. It found that climate resiliencies built into the remedies implemented at these sites were critical to successfully maintaining long-term protectiveness. These studies have helped inform climate adaptation planning for the Superfund program.

Strategies for mitigating vulnerabilities and increasing remedy resilience in light of climate change may apply to existing or planned remediation systems. The strategies also may be applied to cleanups conducted under other regulatory programs or through voluntary efforts to increase remedy resilience to the potential effects of climate change.

Examples of climate adaptation measures that increase resiliency include:

- Vegetating landfill cap covers with native plants provides a ground cover that is tolerant of local seasonal temperature and precipitation extremes and minimizes the need for maintenance, such as mowing and watering.
- Designing and constructing capping systems to withstand significant storm and flood events.
- Raising the elevation of critical electrical instrumentation for remedial components and using water-tight materials to construct and protect remedial components.
- Restoring wetlands to reduce wave action in floodplain and intertidal zones to minimize erosion from storm events.
- Integrating specifications regarding tolerance of extreme weather and other natural hazards into building and remedial infrastructure designs.
- Routinely reassessing site vulnerability to wildfires and implementing resilience measures as recommended by firefighting agencies.

OPPORTUNITY ZONE TAX INCENTIVES AS SUPERFUND REDEVELOPMENT TOOLS

Opportunity Zones are a powerful tool to encourage economic revitalization in distressed communities by incentivizing long-term, sustainable investment in redevelopment and stimulating economic growth. State governors have designated 8,764 Opportunity Zones across the country in geographic areas that suffer double the national poverty rate. Socio-economic metrics show that Opportunity Zones are among the highest-need communities in the nation. The U.S. Department of the Treasury estimates that Opportunity Zones may attract up to $100 billion in investments, which strengthens the financial viability of redevelopment projects at Superfund sites located in Opportunity Zones.

Redevelopment of current or former Superfund sites may qualify for Opportunity Zone tax benefits. Nationally, there are 343 NPL sites located entirely or partially in Opportunity Zones. Estimates indicate there are thousands of Superfund removal sites in Opportunity Zones across the nation. In Region 10, there are 34 NPL sites located entirely or partially in an Opportunity Zone. Redevelopment investments that meet appropriate qualifying criteria may be eligible for Opportunity Zone tax benefits. EPA and the U.S. Department of Housing and Urban Development (HUD) have tools and resources to help local leaders achieve equitable outcomes in Opportunity Zone development projects.

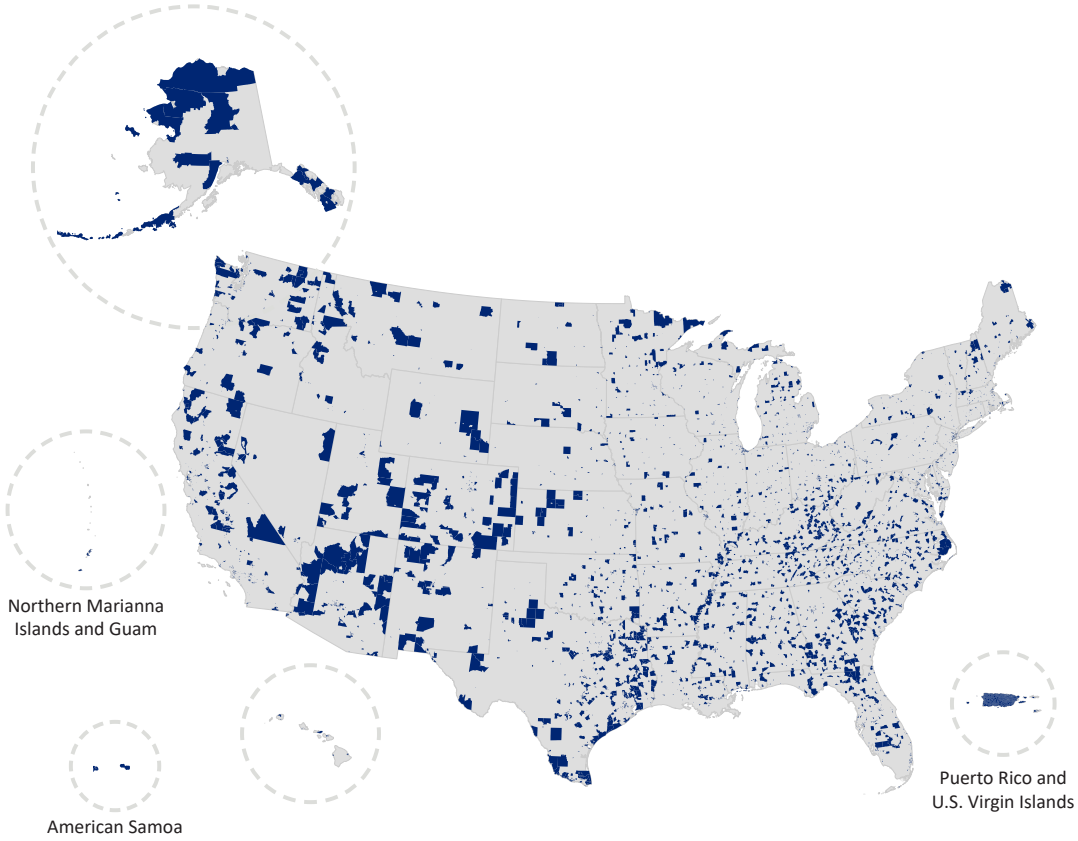

Figure 15. About 8,764 Opportunity Zones were established in all 50 states, the District of Columbia, and the five U.S. territories.

REDEVELOPMENT IN ACTION

ALCOA (VANCOUVER SMELTER)

The 300-acre Alcoa (Vancouver Smelter) site is located next to the Columbia River in Vancouver, Washington. The former Aluminum Company of America (Alcoa) operated an aluminum smelter on the western portion of the site between 1940 and 1985, that produced finished goods such as wire, rod and extrusions. Just outside the smelter, operators dumped smelter waste containing cyanide and fluoride, contaminating soil and groundwater. EPA listed the site on the NPL in 1990.

Alcoa ceased operating at the site in 1985 and sold the facility to another aluminum smelting company. EPA worked with the state and Alcoa to excavate and dispose of the contaminated soil, allowing the company to continue smelting operations throughout site cleanup. EPA deleted the site from the NPL in 1996.

Aluminum smelting continued at the site until the company closed in 2000. The land had several owners over the next decade, with the Port of Vancouver ultimately purchasing about 218 acres of the site in 2009. The purchase allowed the Port to develop Terminal 5, its newest marine terminal. Soon after purchase of the property, the Port completed the Terminal 5 rail loop track, marking a major milestone of the port's West Vancouver Freight Access rail improvement project. The loop track added 35,000 feet of new rail capacity to the port's internal system, allowing unit trains to be handled on site, and helping to reduce congestion on the regional rail system by as much as 40 percent.

The construction of the loop track at Terminal 5 allowed the Port to become a leader in the port industry in supporting renewable energy projects. In 2020, the Port received and processed 250-foot wind turbine blades, the longest blades to ever enter the West Coast of the United States. In 2022, enough wind turbine components to serve about 94,000 homes were brought in through the Port.

Cleanup of the site also allowed non-Port related reuse. Local utility, Clark Public Utilities, operates a 248-megawatt gas fired turbine and steam recovery plant on site at the River Road Generation Plant. The plant generates nearly 35% of the utility's energy. Clark County also runs its Jail Work Center on site, where laundry and kitchen services are provided for those in the corrections facilities.

Figure 16. Wind turbine parts are a major import at the Port of Vancouver.

BUNKER HILL MINING & METALLURGICAL COMPLEX

Mining Cleanup Fosters Economic Growth, Ecological Revitalization and Recreation

The Coeur d'Alene Basin in northern Idaho is one of the largest historic mining districts in the world. Over 100 years of commercial mining, milling and smelting resulted in widespread contamination of soil, sediment, groundwater and surface water in the area now known as the Bunker Hill Mining & Metallurgical Complex Superfund site. The site includes mining-contaminated areas in the Coeur d'Alene River corridor, floodplains, downstream water bodies, tributaries and fill areas, as well as the 21-square-mile Bunker Hill Box, which surrounds an area of former smelting operations. EPA added the site to the NPL in 1983.

EPA, the Idaho Department of Environmental Quality (IDEQ) and the Panhandle Health District have been working at the site since the mid-1980s. They have removed lead-contaminated soil and gravel from residential properties, churches, schools, parks, businesses and rights-of-way. Cleanup has also included consolidation and capping of waste rock, mine tailings, and contaminated soil and sediment, capture and treatment of mine drainage, creek reconstruction, demolition of abandoned milling and processing facilities, revegetation efforts, ecological restoration, and treatment of contaminated groundwater. The site's Institutional Control Plan (ICP) is one of the remedy's innovative components. The ICP plays a major role in protecting public health and helps encourage local lenders to fund redevelopment projects. Through the ICP, the Panhandle Health District helps area communities and visitors learn about the risks associated with site contamination and how to enjoy the natural environment safely. It also helps local communities maintain protective barriers over contaminated materials and ensures the compatibility of future uses with the remedy.

In 1987, the city of Kellogg began to pursue redevelopment opportunities for cleaned-up parts of the site. The ICP addressed developer and lender concerns and helped facilitate redevelopment. Today, the site hosts a wide range of commercial, industrial and public-service businesses and housing. For example, Silver Mountain Resort, a year-round recreation destination, is on site.

Looking forward, redevelopment projects such as Silver Mountain Resort continue to attract people to the area. New arrivals invest in homes and start businesses, bolstering the economy. In 2018 and 2019, EPA's Superfund Redevelopment Program (SRP) worked with EPA Region 10, IDEQ and area communities on a reuse planning project for the site. The project evaluated site reuse opportunities and planned for future redevelopment of targeted areas. SRP then developed an areawide reuse framework for priority parcels. The framework provides IDEQ and local stakeholders with a coordinated reuse strategy for undeveloped parcels. It also identifies near-term and long-term opportunities for productive use that are compatible with the site's remedy.

Cleanup has also resulted in significant ecological benefits, including the successful revegetation of hillsides and the conversion of nearly 400 acres of agricultural land into thriving wetland habitat. Other agriculture-to-wetlands remediation and restoration projects are in the works, such as at Gray's Meadow in the Lower Coeur d'Alene River Basin. The use of native plants and trees during revegetation efforts helped create habitat for wildlife and pollinators. Diverse wildlife has returned to the site as a direct result of the cleanup. Recreational benefits include the reuse of a former rail line after cleanup as the Trail of the Coeur d'Alenes, a 72-mile paved bike trail that crosses the site. The Rails-to-Trails Conservancy recognized it as one of the 25 top trails in the nation.

Figure 17. The Silver Mountain Resort, with a double rainbow cascading over the Bunker Hill Mining & Metallurgical Complex Superfund site (Idaho).

GRANT WAREHOUSE REMOVAL
Community-Focused Affordable Housing Addresses Gentrification and Displacement

The Grant Warehouse Removal site is in Portland, Oregon. From 1980 to 1998, the site owner recovered precious metals from ore, liquids and process wastes from other facilities on site. In 1998, Portland police responded to a dispute there. They found chemical and waste containers stacked wall to wall in the warehouse building and yard. Cleanup included demolition of the building and removal of all hazardous materials.

In 2015, the city sought a community-based team to develop the vacant parcel. The city selected a proposal from the Portland Community Reinvestment Initiative (PCRI), in partnership with Gerding Edlen, to build affordable housing and a community-focused commercial space on site. The project focused on addressing the needs of community members displaced by gentrification. The project is part of PCRI's Pathway 1000 Initiative. Its goal is to build 1,000 affordable housing units in North and Northeast Portland, which have seen high rates of minority displacement. The area also has a history of facing many environmental justice challenges, including disproportionately high pollution impacts from diesel particulate matter, traffic proximity, cancerous and non-cancerous air toxicity risks, lead paint in housing, and proximity to hazardous waste facilities. Community revitalization efforts include transitioning these neighborhoods away from toxic land uses to support healthy neighborhoods.

The Portland Housing Bureau donated the parcel at no cost and provided about $7.4 million for the project. Its funding leveraged over $17 million from other public and private entities, including US Bank, Oregon Housing and Community Services, the Meyer Memorial Trust and Bellwether Capital Partners. The Portland Development Commission and PCRI then coordinated closely with EPA and the Oregon Department of Environmental Quality to make sure redevelopment was compatible with the site's remedy and protective of public health and the environment.

For example, a third-party environmental contractor tested site soil to confirm that contamination had been cleaned up and that the area could support residential uses. PCRI also sought to create equitable economic opportunities during the project, hiring more than 50% of design and construction services through Minority-Owned, Women-Owned and Emerging Small Business companies. Building design focused on energy efficiency and minimizing utility costs for residents. Features such as a rooftop solar array and energy- and water-efficient appliances and systems have led to the project achieving Gold-level LEED certification for sustainable design and construction.

In 2018, PCRI held a ribbon-cutting ceremony, officially opening the Beatrice Morrow-Cannady Building at the site. Named for the noted civil rights activist, the 5-story building hosts 80 apartments, over half of which are two-bedroom and three-bedroom units intended for families. Other building features include community and commercial spaces on the ground floor, and 29 parking spaces. A central courtyard provides outdoor space and a play area for children.

PCRI offers classes in financing and budgeting for residents, with a goal of at least 75% of renters moving on to home ownership in the community. The project is a meaningful reinvestment in the North and Northeast Portland neighborhoods, aiming to mitigate the impacts of gentrification while adding value and fostering a renewed sense of community in the neighborhood.

Figure 18. The Beatrice Morrow-Cannady building includes parking for residents at the Grant Warehouse Removal site (Oregon).

PORTLAND HARBOR
Cleanup Supports Ecological Restoration and Tribal Natural Resource Access Rights

The Portland Harbor Superfund site in Portland, Oregon, includes a 10-mile stretch of the lower Willamette River known as Portland Harbor and associated upland source properties. For over 150 years, Portland Harbor has served as an international port for commerce. Historically, contaminants from many facilities entered the river system from different activities, including ship building and repair, ship dismantling, wood treatment and lumber milling, storage of bulk fuels, manufactured gas production, chemical manufacturing and storage, metal recycling, production and fabrication, steel mill, smelter and foundry operations, and electrical production and distribution. These activities resulted in direct discharges from upland areas through stormwater and wastewater outfalls, releases and spills from commercial operations occurring over the water, municipal combined sewer overflows, and indirect discharges through overland flow, bank erosion, groundwater and other nonpoint sources.

In addition, contaminants from off-site sources reached the site through surface water and sediment transport from upstream and through atmospheric deposition. Operations that continue today along the riverbanks include bulk fuel storage, barge building, ship repair, automobile scrapping, recycling, steel manufacturing, cement manufacturing, operation and repair of electrical transformers (including electrical substations), and many smaller industrial operations.

While the harbor area is heavily industrialized, it is in a region also characterized by commercial, residential, recreational and agricultural uses. Land uses in the harbor along the lower Willamette River include marine terminals, manufacturing and other commercial operations as well as public facilities, parks and open spaces. Historically, the Willamette River and surrounding watershed offered access to abundant natural resources in the river and on land. Many of these resources, such as fish, marine mammals, waterfowl, land mammals and native plants, are still present.

A federal navigation channel extends from the confluence of the lower Willamette River with the Columbia River to river mile (RM) 11.6. Container and other commercial vessels regularly transit the river. Certain parts of the river require periodic maintenance dredging to keep the navigation channel at its authorized depth. In addition, the Port of Portland and other parties perform maintenance dredging periodically to support access to dock and wharf facilities.

EPA added the site to the National Priorities List (NPL) in 2000. EPA selected a final cleanup plan for the site in 2017 and updated it in 2019. The plan includes cleanup of about 380 acres of contaminated sediment and 22,600 feet of riverbank. The $1 billion plan includes dredging, capping, enhanced natural recovery, monitored natural recovery and about 60 acres of compensatory habitat mitigation.

Figure 19. The Fremont Bridge crossing the Willamette River at the Portland Harbor Superfund site (Oregon).

The site area in the lower Willamette River is part of the ancestral homelands of many native peoples, including the Cayuse, Chinook, Clackamas, Kalapuya, Klickitat, Molala, Nez Perce, Umatilla, Umpqua, Walla Walla, Warm Springs, Wasco, Yakama, and many other tribes and bands. Portland has one of the largest native populations in the country, and tribal peoples from across the Pacific Northwest continue to visit, use and honor the lower Willamette River and its resources. Fish are among the resources used most frequently by the tribes and bands in the Portland Basin and the Willamette Valley. Tribes and bands have reserved hunting, fishing and gathering rights through treaties with the United States. The river is also an important fish migration pathway. Various recreational fisheries use the lower Willamette River. Resident fish in the site area include smallmouth bass, brown bullhead, black crappie and carp. Tribes and bands also continue to gather native plants in the area for food and medicinal purposes.

Figure 20. Riparian restoration areas at the Portland Harbor Superfund site (Oregon).

Through a Bona Fide Prospective Purchaser Doing Work Agreement with EPA, the University of Portland purchased the 35-acre Triangle Park area of the site in 2008 and cleaned up the area with EPA oversight. The university has plans for athletic fields, a boathouse and an environmental learning center in the Triangle Park area. A trail will provide public access to the Willamette River waterfront.

EPA's SRP is providing in-kind planning assistance to gather initial information about future use goals for part of the site between Green Anchors and Willamette Cove. The planning assistance will include information gathering from the city, property owners and community partners in the area to better understand the range of future-use goals and considerations. The outcome will be a report summarizing the information gathered, including preliminary future goals, land use context, local initiatives, key stakeholder interests, reuse considerations and any recommendations for further SRP reuse support.

Figure 21. Aerial view of the Triangle Park area at the Portland Harbor Superfund site (Oregon).

REDEVELOPMENT ON THE HORIZON IN REGION 10

MARTIN-MARIETTA ALUMINUM CO.
Ongoing Operations Sustain Local Jobs, Reuse Opportunities

The 350-acre Martin-Marietta Aluminum Co. Superfund site is in The Dalles, Oregon. The Martin-Marietta Corporation (now Lockheed Martin) used the area for aluminum production activities from 1958 to 1984. During operations, spent pot liner waste and hazardous contaminants, including cyanide, fluoride, sodium, polynuclear aromatic hydrocarbons (PAHs) and sulfates, were released into the environment. Facility operations and improper waste burial contaminated site soil and groundwater.

EPA added the site to the NPL in 1987 and the Martin Marietta Corporation led cleanup efforts with EPA oversight from 1989 to 1992. Cleanup consisted of consolidating waste in a landfill on site and placing soil covers over pond areas that received scrubber sludge waste, as well as plugging wells and connecting users to the City of Dallas water supply. In 1996, EPA took the site off the NPL. Monitoring activities and remedy optimization are ongoing. About 4,300 people live within a mile of the site.

Northwest Aluminum Company leased part of the site property from Martin Marietta Corporation in 1987 and later purchased the plant in 1990. The company continued aluminum manufacturing until filing for bankruptcy in 2003. The facility was then acquired by the current owner, which is also named Northwest Aluminum Company, but is a separate legal entity from the previous owner. From 2007 to 2011, Northwest Aluminum Company demolished buildings and removed more contaminated soil with state oversight. An industrial aluminum extrusion facility remains active on site.

The land around the site has been annexed as part of The Dalles and is zoned for commercial and industrial uses. The City and the Port of The Dalles are interested in redeveloping the site for industrial and commercial purposes. In 2021, EPA's SRP began providing reuse planning assistance for the site. Today, in addition to the aluminum facility, a light industrial park is situated along the eastern boundary of the site. In 2022, Google began construction of a data center next to the site. Google is coordinating design and construction efforts with Lockheed Martin and the EPA site team.

Figure 22. Demolition of former smelter works buildings has created open areas with reuse potential at the Martin-Marietta Aluminum Co. Superfund site (Oregon).

MIDWAY LANDFILL
Landfill Redevelopment Facilitates Public Transit, Expands Transportation Options

The 60-acre Midway Landfill Superfund site is in King County, Washington, between U.S. Interstate 5 and U.S. Highway 99. A former gravel quarry served as a municipal solid waste landfill on site from 1966 to 1983. In 1983, operators covered the landfill with silt and fine sands. In 1985, investigations found combustible gas in structures around the landfill and contaminated groundwater beyond the landfill boundary. EPA added the site to the NPL in 1986.

In 1992, the city of Seattle placed a final cap over the site, refined landfill gas controls, and put in a stormwater and drainage control system. These remedy components remain in place. Washington State's Department of Ecology (Ecology) is the lead agency at the site.

In 2007, EPA's SRP sponsored an assessment to evaluate reuse options for the site. Today, the Washington Department of Transportation is using part of the area for an Interstate 5 road-widening project. Sound Transit, the area's public transit system, is also extending its Link light rail system. It is using the edge of the Midway Landfill as part of the route extension. A Prospective Purchaser Consent Decree between Ecology and Sound Transit defines requirements for Sound Transit's long-term maintenance of its part of the site to ensure the continued protectiveness of the remedy. The road-widening and light-rail construction projects are underway and the latter is expected to begin operations in 2026. The rest of the site includes the closed landfill and unused open space.

Figure 23. Aerial view of transportation redevelopment plans at the Midway Landfill site (Washington). Image used with permission of the Washington Department of Ecology.

Figure 24. The interstate expansion and light-rail extension will cross the eastern part of the Midway Landfill Superfund site (Washington). Image used with permission of the Washington Department of Ecology.

CONCLUSION

EPA works closely with its partners at Superfund sites across Region 10 to make sure sites can safely be reused or remain in continued use during and following cleanup. EPA also works with businesses and organizations at Superfund sites throughout the cleanup process to make sure they can remain open.

The businesses and organizations at these sites provide jobs and income for communities and generate local and state taxes. Cleanup and redevelopment also helps stabilize and boost property values. There are 75 NPL sites and 14 non-NPL Superfund sites in Region 10 that have either new uses in place or uses that have remained in place since before cleanup. Future uses are planned for many more Superfund sites in Region 10. EPA remains committed to working with all stakeholders to support Superfund redevelopment opportunities in Region 10.

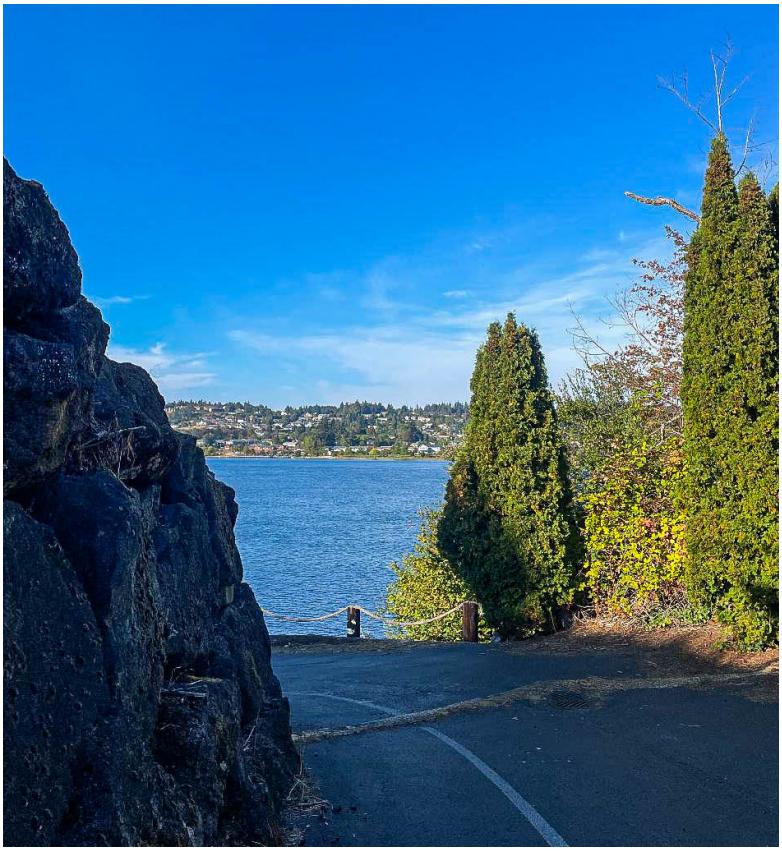

Figure 25. The Port Washington Narrows in Puget Sound at the Bremerton Gasworks site (Washington).

The redevelopment of Superfund sites takes time and is often a learning process for project partners. Ongoing coordination among EPA, tribes, state agencies, local governments, communities, potentially responsible parties, site owners, developers, and nearby residents and business owners is essential. EPA tools, including reuse assessments and plans, comfort letters and partial deletions of sites from the NPL, often serve as the foundation for moving forward. At some sites, parties may need to take additional actions to ensure reuses are compatible with site remedies.

Across Region 10, Superfund sites are now home to major commercial and industrial facilities, mid-size developments and small businesses providing services to surrounding communities. EPA is committed to working with all stakeholders to support the restoration and renewal of these sites as long-term assets.

EPA Superfund Redevelopment Resources

EPA Region 10 Superfund Redevelopment Coordinator
Piper Peterson | (206) 553-4951 | peterson.piper@epa.gov

Superfund Sites in Reuse: find more information about Superfund sites in reuse
www.epa.gov/superfund-redevelopment/find-sites-reuse

EPA Superfund Redevelopment Program Website: tools, resources and more information about Superfund site reuse
www.epa.gov/superfund-redevelopment

EPA Office of Site Remediation Enforcement Website: tools that address landowner liability concerns
www.epa.gov/enforcement/landowner-liability-protections

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STATE REDEVELOPMENT PROFILES

ALASKA REDEVELOPMENT PROFILE

EPA partners with the Alaska Department of Environmental Conservation to oversee the investigation and cleanup of Superfund sites in Alaska. Alaska has nine Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Alaska.

Businesses and Jobs

EPA has collected economic data for 118 businesses and organizations operating on three sites in reuse or continued use in Alaska.

Table 3. Detailed Site and Business Information for Sites in Reuse and Continued Use in Alaska (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales[b]	Total Employees	Total Annual Employee Income
In Reuse	*1*	*0*	*-*	*-*	*-*	*-*
In Continued Use	*1*	*1*	*2*	*$109,000*	*5*	*$256,000*
In Reuse and in Continued Use	*7*	*2*	*116*	*$423 million*	*1,803*	*$141 million*
Totals	***9***	***3***	***118***	***$423 million***	***1,808***	***$141 million***

[a] Four sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.
[b] While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This could be attributed to a number of business conditions and/or data reporting. In addition, annual sales figures are not available (or applicable) for every organization that makes jobs data available.

Property Values and Property Tax Revenues

EPA has collected property value data for two Superfund sites in reuse or continued use in Alaska. These sites span 285 property parcels and 2,659 acres.

Table 4. Property Value and Tax Information for Sites in Reuse and Continued Use in Alaska[a]

Total Land Value (2 sites)	Total Improvement Value (2 sites)	Total Property Value (2 sites)	Total Annual Property Taxes (2 sites)
$77 million	*$96 million*	*$173 million*	*$2 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which was 2022 for all data collected.

Figure 26. Standard Steel & Metals Salvage Yard (USDOT) (Alaska).

Did You Know?

Alaska Railroad Corporation leases most of the Standard Steel & Metals Salvage Yard (USDOT) Superfund site in Anchorage, Alaska, to Central Recycling Services for the recycling of construction and demolition waste. Its operations provide over $1 million in estimated annual employee income.

IDAHO REDEVELOPMENT PROFILE

EPA partners with the Idaho Department of Environmental Quality to oversee the investigation and cleanup of Superfund sites in Idaho. Idaho has 13 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Idaho.

Businesses and Jobs

EPA has collected economic data for 267 businesses and organizations operating on six sites in reuse or continued use in Idaho.

Table 5. Detailed Site and Business Information for Sites in Reuse and Continued Use in Idaho (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*4*	*1*	*1*	-	-	-
In Continued Use	*3*	*1*	*1*	*$13 million*	*17*	*$880,000*
In Reuse and in Continued Use	*6*	*4*	*265*	*$404 million*	*3,220*	*$161 million*
Totals	***13***	***6***	***267***	***$417 million***	***3,237***	***$162 million***

[a] One site is a federal facility. Federal facility sites are excluded from all other detailed site and business data presented above.

Property Values and Property Tax Revenues

EPA has collected property value data for three Superfund sites in reuse or continued use in Idaho. These sites span 156 property parcels and 2,624 acres.

Table 6. Property Value and Tax Information for Sites in Reuse and Continued Use in Idaho[a]

Total Land Value (2 sites)	Total Improvement Value (2 sites)	Total Property Value (3 sites)	Total Annual Property Taxes (3 sites)
$9 million	*$67 million*	*$135 million*	*$1 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2021 to 2022.

Figure 27. Monsanto Chemical Co. (Soda Springs Plant) (Idaho).

Did You Know?

Since 1952, an elemental phosphorus manufacturing facility has been active at the Monsanto Chemical Co. (Soda Springs Plant) Superfund site in Soda Springs, Idaho. It produces refined phosphorus for a range of uses. Its operations provide over $33 million in estimated annual employee income. Parts of the site's buffer area are in agricultural use.

OREGON REDEVELOPMENT PROFILE

EPA partners with the Oregon Department of Environmental Quality to oversee the investigation and cleanup of Superfund sites in Oregon. Oregon has 19 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Oregon.

Businesses and Jobs

EPA has collected economic data for 105 businesses and organizations operating on 12 sites in reuse or continued use in Oregon.

Table 7. Detailed Site and Business Information for Sites in Reuse and Continued Use in Oregon (2022)

	Sites	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*10*	*7*	*22*	*$1.6 billion*	*5,507*	*$300 million*
In Continued Use	*3*	*2*	*2*	*$291 million*	*635*	*$55 million*
In Reuse and in Continued Use	*6*	*3*	*81*	*$2.3 billion*	*4,126*	*$308 million*
Totals	***19***	***12***	***105***	***$4.1 billion***	***10,268***	***$663 million***

Property Values and Property Tax Revenues

EPA has collected property value data for eight Superfund sites in reuse or continued use in Oregon. These sites span 99 property parcels and 1,402 acres.

Table 8. Property Value and Tax Information for Sites in Reuse and Continued Use in Oregon[a]

Total Land Value (8 sites)	Total Improvement Value (8 sites)	Total Property Value (8 sites)	Total Annual Property Taxes (8 sites)
$131 million	*$375 million*	*$506 million*	*$3 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which was 2022 for all data collected.

Figure 28. Reynolds Metals Company (Oregon).

Did You Know?

Aluminum smelting activities throughout the 20th century resulted in contamination at the Reynolds Metals Company Superfund site outside of Portland, Oregon. The Port of Portland acquired the area in 2007 and developed an industrial park there. Today, site businesses employ over 5,000 people. They provide nearly $284 million in estimated annual employee income and generate over $1.5 billion in estimated annual sales.

WASHINGTON REDEVELOPMENT PROFILE

EPA partners with the Washington Department of Ecology to oversee the investigation and cleanup of Superfund sites in Washington. Washington has 48 Superfund sites with either new uses in place or uses that have remained in place since before cleanup. The sections below present economic data, property values and tax data for sites in reuse or continued use in Washington.

Businesses and Jobs

EPA has collected economic data for 737 businesses and organizations operating on 28 sites in reuse or continued use in Washington.

Table 9. Detailed Site and Business Information for Sites in Reuse and Continued Use in Washington (2022)

	Sites[a]	Sites with Businesses	Businesses	Total Annual Sales	Total Employees	Total Annual Employee Income
In Reuse	*25*	*17*	*37*	*$569 million*	*868*	*$60 million*
In Continued Use	*5*	*1*	*1*	*$2 million*	*15*	*$855,000*
In Reuse and in Continued Use	*18*	*10*	*699*	*$5 billion*	*17,150*	*$1.2 billion*
Total	***48***	***28***	***737***	***$5.6 billion***	***18,033***	***$1.3 billion***

[a] Three sites are federal facilities. Federal facility sites are excluded from all other detailed site and business data presented above.

Property Values and Property Tax Revenues

EPA has collected property value data for 31 Superfund sites in reuse or continued use in Washington. These sites span 552 property parcels and 3,608 acres.

Table 10. Property Value and Tax Information for Sites in Reuse and Continued Use in Washington[a]

Total Land Value (31 sites)	Total Improvement Value (31 sites)	Total Property Value (31 sites)	Total Annual Property Taxes (31 sites)
$1.3 billion	*$665 million*	*$2 billion*	*$12 million*

[a] The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2021 to 2023.

Figure 29. Lakewood (Washington).

Did You Know?

EPA added the Lakewood Superfund site in Lakewood, Washington, to the NPL in 1982 due to contamination from a dry-cleaning business. An electrical supply and lighting company is now active on site. It contributes nearly $1.5 million in estimated annual employee income.

REUSE INFORMATION SOURCES

Write-ups of sites in reuse or continued use included in this profile are based on available EPA resources, including Superfund Redevelopment Program case studies as well as other resources. Links to EPA's Superfund Redevelopment Program case studies and other resources are included below.

EPA Resources

Alcoa (Vancouver Smelter). EPA Site Profile. www.epa.gov/superfund/alcoa-vancouver

Bunker Hill Mining & Metallurgical Complex. EPA Site Profile. www.epa.gov/superfund/bunker-hill

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BUSINESS, JOBS, SALES AND INCOME INFORMATION

Information on the number of employees and sales volume for on-site businesses comes from the Hoovers/Dun & Bradstreet (D&B) (www.dnb.com) database. EPA also gathers information on businesses and corporations from D&B. D&B maintains a database of over 330 million businesses worldwide.

When Hoovers/D&B research was unable to identify employment and sales volume for on-site businesses, EPA used the ReferenceSolutions database (thereferencegroup.com). In cases where ReferenceUSA did not include employment and sales volume for on-site businesses, EPA used the Manta database (www.manta.com). The databases include data reported by businesses. Accordingly, some reported values might be underestimates or overestimates. In some instances, business and employment information came from local newspaper articles and discussions with local officials and business representatives. While sales values typically exceed estimated totals of annual income, sales can sometimes be lower than estimated income. This can be attributed to a number of business conditions and/or data reporting.

EPA obtained wage and income information from the U.S. Bureau of Labor Statistics (BLS). Part of the U.S. Department of Labor, the BLS is the principal federal agency responsible for measuring labor market activity, working conditions and price changes in the economy. All BLS data meet high standards of accuracy, statistical quality and impartiality.

EPA used the BLS Quarterly Census of Employment and Wages database to obtain average weekly wage data for site businesses. Average weekly wage data were identified by matching the North American Industry Classification System (NAICS) codes for each type of business with weekly wage data for corresponding businesses in site counties. If weekly wage data were not available at the county level, EPA sought wage data by state or national level, respectively. In cases where wage data were not available for the six-digit NAICS code, EPA used higher-level (less-detailed) NAICS codes to obtain the wage data.

To estimate the annual income earned from jobs at site businesses, EPA multiplied the average weekly wage figure by the number of weeks in a year (52) and by the number of jobs (employees) for each business.

Business and employment data used for this profile were collected in 2022. Estimated annual employment income was calculated using 2022 jobs data and BLS average weekly wage data for those jobs from 2021 (the latest available wage data at the time of this profile). Federal facility sites are included in calculations of total sites in reuse or continued use only. Federal facility sites are excluded from all other calculations (i.e., number of sites with businesses, number of businesses, total jobs, total income and total annual sales). All sales and income figures presented have been rounded for the convenience of the reader. Throughout this report, sales and annual employee income may not sum exactly to the totals presented due to rounding.

PROPERTY VALUE AND TAX INFORMATION

EPA collected on-site property values and property taxes included in this profile for a subset of Superfund sites by comparing available site boundary information with available parcel boundary information and gathering information for selected parcels from county assessor datasets. The property value and tax amounts reflect the latest property value year and tax data year available in county assessor datasets, which varied from 2021 to 2023. Throughout this report, property and tax values may not sum exactly to the totals presented due to rounding.

Back cover photos: ***Asarco Inc. (Washington), Puget Sound Naval Shipyard Complex (Washington), Bremerton Glassworks (Washington), Palermo Well Field Ground Water Contamination (Washington), Eastern Michaud Flats Contamination (Idaho).***

EPA

United States Environmental Protection Agency

Region 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101

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